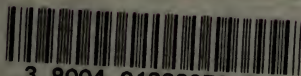


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The following pages have been compiled from various sources, for the use of the Students of the Materia Medica Class, Queen's College.

FIFE FOWLER.

Kingston, C. W., August 1864.

The term *Materia Medica*, in the strict sense, has reference only to material substances used in the treatment of disease, but in the more extended sense, it includes all remedial agents of whatever kind, whether material or otherwise, used in palliating, curing, or preventing disease. A Medicine is a substance which produces such changes in the vital functions as makes it available for curative purposes. Medicines differ from alimentary substances in not being essential to the support of life, in not being assimilated to the various organs but in some way altering or modifying the various vital actions.—Poisons differ in the degree of action—they have the inherent power of violently disturbing the system; they are not necessarily medicinal agents, although many of them under proper regulations are valuable as such.

By Therapeutics is understood the application of remedies to the cure of disease.

Pharmacy is that department which has reference to the collecting, preparing, preserving and dispensing of Medicines. Remedies are divided into those which act through the mind, and those acting directly on the body. The former may be called Mental, the latter Corporal Remedies. The internal affections of the mind, as fear, faith, and, above all, hope, are oftentimes used as powerful remedies. Coleridge says, "he is the best Physician who is the most ingenious inspirer of hope." The mind communicates with the external world through the senses, and in this way also powerful influences may be brought to bear on disease. Sound may be stimulating or soothing; color is not without its influence, and a good deal

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may be done through the medium of common sensation. Of the remedies acting directly on the body, some are imponderable, such as Light, Heat and Electricity; others are of a surgical or mechanical nature, and the remainder are the Medicines as above defined. Medicines act Physiologically and Therapeutically: by the former is understood the effect medicines have on the system without reference to disease; by the latter the action they manifest on the disease—for example, the Physiological effects of an Emetic are nausea, vomiting, &c., while the Therapeutical may be the cure of Jaundice, or Headache, or the prevention of a paroxysm of ague. The Physiological effects of remedies are divided into Local and Remote; some medicines are exclusively local in their action confining themselves to the place to which they are applied, acting mechanically or chemically on the surface; sometimes when the action is extended, it is only to the adjacent parts, but in the majority of instances, parts far removed are more or less effected. Local actions may be said then to be manifested previous to absorption, and remote ones subsequent to it. Medicines produce their effects on the system either by mechanical, chemical or vital means. 1st. Mechanical—by excluding atmospheric air, and protecting parts in various ways; by external form and weight; and more important still, medicines act mechanically through the influence they have over the Phenomena of Exosmose and Endosmose.

When the serum of the blood is separated from another liquid by an organic membrane, two currents are in general established, one from the serum to the solution, the other from the solution to the serum. When the intensity of the first exceeds that of the second, it is called endosmose of the serum, but when the intensity of the second exceeds that of the first, it is called endosmose of the solution. This action is supposed to go on not only before but after the absorption of medicines into the circulation. This is supposed to explain the action of many medicines, more especially those of a saline character. Those whose specific gravity is greater than that of the serum of the blood, producing endosmose of the serum and purging; those on the other hand whose

specific gravity is less than that of the serum, producing endosmose of the solution, entering the blood readily and usually acting as Diuretes.

2nd. Medicines may act chemically.—The chemical constitution of the secretions of the body and of the blood itself, is often changed in disease, and medicines acting chemically, have undoubtedly the power in many instances of bringing back these fluids to a more normal state. This they may do before absorption, while in the blood, or at the time of their being eliminated from the system. Acids and alkalies may be mentioned as examples of medicinal agents acting chemically, and as such they are frequently used. The local action of many caustics is explained purely upon chemical grounds; and the action of many metallic salts is greatly, if not entirely, owing to the chemical union they form with, and the action they have upon the fibrin and albumen of the body.

3rd. Medicines are said to act vitally or dynamically, when they produce peculiar effects without it being possible to account for these by mechanical or chemical agencies: of the nature of this action, ignorance must be confessed, and stating that medicines act dynamically, is in fact acknowledging ignorance of their mode of action; under this head properly speaking, should be classed, what are called the secondary actions of medicines, i. e., those actions which follow the original and characteristic impression, in consequence of certain physiological laws; for instance, it is a law of the system that a certain amount of depression follows a certain amount of excitement, and generally speaking the opposite also holds good; these actions may, and frequently are exemplified after the administration of medicinal agents. Again there is an inherent disposition and a greater or less power in all living bodies to resist injury, and repair any damages they may receive; hence secondary actions, varied in their nature, are set up in many instances, and it behoves all students of disease to recognise them; and lastly, it must not be forgotten that sympathies exist between the different organs and other parts of the body, for this together with the powerful influence of the mind, oft-

times explains the action of medicines which to superficial observers appear curious, nay almost mysterious.

ABSORPTION OF MEDICINES.

Although some medicines such as irritant emetics, cathartics &c., act merely locally, it is necessary that the great majority obtain entrance into the blood or internal fluids, before their action can be manifested; and, moreover, to enable them to be absorbed it is necessary that they be either soluble in water, or in the gastric or intestinal juices.—That medicines are absorbed, is proved in various ways. The great majority of medicines have been found in the blood, chyle, solids, and in the various excretions, and when with this is coupled the fact, that they disappear from surfaces to which they have been applied, it forms a strong argument; but over and above it is found that a medicine introduced into the system elsewhere, acts in the same way as when it has been swallowed; moreover the prevention of the remote effects is brought about by the prevention of the circulation of medicines, and the prevention and retardation of the remote effects of any medicine are influenced by any circumstance which promotes or retards the circulation—but on the other hand, although the stoppage or retardation of the circulation thus influences the remote effects of medicines, the same thing does not hold good in regard to the nerves, for the division even of the spinal cord as long as the circulation is carried on, does not prevent the remote effects of medicines from taking place. Lastly, the circulation of the blood is sufficiently quick to account for the operation of even the most rapid poisons. It is thus very apparent that medicines find their way into the blood, and that the majority, if not the whole, of their remote actions are owing to their doing so. These given in a state of solution, may immediately pass by endosmose, absorption, capillary attraction (or whatever name the process may get), through the mucous membrane, into the small net work of capillaries, hence into the mesenteric veins, and portal system; but if not given in solution solvents of varied character are provided by the system; the gastric juice and saliva dissolve

some, the acids of the stomach and intestinal canal others, and the alkaline secretion of the Liver and Pancreas others, although some medicines have been found in the chyle, yet this is not the natural entrance for them, the Lacteals are not always in a condition suitable for taking up medicines, and undoubtedly they would thus act much less expeditiously. If anything more is required to shew that the Lacteals play but a very secondary part in the absorption of medicines, the fact may be mentioned that the stopping up of this channel does not in the slightest degree prevent the action of medicines introduced into the intestinal canal. Medicines are absorbed into the blood either unchanged, or somewhat modified, according to circumstances, by the fluids of the intestinal canal: after their entrance they circulate with the blood, some are deposited to a certain extent in the abdominal viscera especially in the Liver, some remain permanently in the blood, but the great majority of them, sooner or later pass out by the excretions, some doing so entirely unchanged, others much altered; some it may be said, merely journey along this highway making it a medium of communication, with either the nervous, muscular system, or the secreting organs, each medicine as it were, having its particular mission, but some on the other hand direct their attention more to the blood itself, altering it in various ways, now changing its color, now changing the size of the corpuscles, now the quantity of the serum and hematin, and now eliminating some noxious principle from it.

INFLUENCES MODIFYING THE EFFECTS OF MEDICINES.

These chiefly relate to the organism, although to a certain extent, the doses of medicines, their state of solubility, their combination &c, also exert a modifying influence.

1st Age. It is a general but not a universal law of nature, that the susceptibility to the influence of medicine is inversely proportionate to the size of an animal, but independent of size, in infancy all the tissues are delicate and easily impressed, especially the skin, mucous membrane and the nervous system; on account of the rapid development which it has to superintend,

the nervous system is easily irritated, hence the frequency of convulsions in infancy even from slight causes. The vascular system too has much less resistance than in adult life, reaction in childhood is always attended with difficulty, hence the alarm that syncope calls forth in the very young; how different is the picture old age presents! the mobility and impressibility essential in childhood (on account of rapid assimilation) is wanting, and instead of soft and delicate tissues they are found firm and dry, sensation is blunted, mobility is impaired, hence as a general rule, smaller doses of medicines are required in infancy and larger in old age, but there are exceptions, some medicines are better borne by children than by adults, as Calomel, Castor Oil and the mild Emetics--on the other hand some, such as narcotics, are not so well borne either by children or by elderly people. No certain rule can be laid down for regulating the doses of medicines to children—perhaps that given by Dr. Young is the best, viz: $\text{age} \propto 12$ for example a child two years old ($2 \times 12 = 24$) requires only $\frac{1}{24}$ th of the quantity required by an adult; but experience teaches practitioners to modify this rule according to circumstances.

2nd Sex. As a general rule females require smaller doses than males, this is well exemplified in the case of mercury.—There are certain conditions of the female system that require attention in the use of medicines. Pregnancy contra-indicates remedies of a harsh character or anything that will make a sudden or powerful impression, especially on the Pelvic viscera. Tonics are not well borne during pregnancy, neither are emetics nor strong drastics; bloodletting seems however, when cautiously performed, to be better borne than in the non-pregnant state. During menstruation few women will take medicine; and perhaps they are right. During suckling it is of importance not to give such medicines as will either drive away the milk or impart deleterious properties to it.

3rd, TEMPERAMENT AND CONSTITUTION OF BODY. The sanguine temperament, demands caution in the use of stimulants, the nervous and irritable do not bear well either evacu-

ants, counter-irritants or mercury—fat people generally bear evacuants and bloodletting badly, and *ceteris paribus*, are more easily vomited than those of a lean habit of body. Some are of a peculiar idiosyncrasy, so that a small quantity of a medicine will effect them powerfully, while the same quantity has on others scarcely any effect.

4th, CLIMATE AND SEASON. Evacuants such as bloodletting are not so well borne in hot climates as in cold and temperate, while on the other hand mercury is well borne in warm climates.

5th, HABIT mostly always lessons the susceptibility of the system to medicines, there are however some exceptions, such as mercury and some medicines of the irritant class. Mode of Life is not without its influence—those greatly or entirely living on vegetable food, are more easily affected by medicines than those eating largely of animal food.

6th, MENTAL ACTION. Medicines will act better when the effects are expected, and when the patient feels confidence in the prescriber; perhaps the only exception to this, is, when opium is given to cause sleep, as anxiety for the result may counteract the effect of the drug, especially if the dose is only a medium one.

7th, STATE OF THE DISEASE has great influence. Inflammation of the stomach for instance, increases susceptibility to emetics; inflammation of the bowels to purgatives, whilst apoplexy on the other hand, diminishes to a great extent, the susceptibility to purgatives.

THERAPEUTIC EFFECTS—MODE OF PRODUCTION.

1st, By removing the exciting cause, this they may do either directly or indirectly.

2nd, By depletion; sometimes there is a great fullness of the system which gives rise to many diseases and prevents the absorbents from acting efficiently—remedies then act therapeutically, by diminishing the quantity of the blood or the serum of it—besides bloodletting, cathartics, diuretics, diaphoretics &c., act as depleting agents.

3rd, Dilution or the copious internal use of water, acts therapeutically, by rendering the liquids of the body less exciting and by promoting secretion.

4th, ELIMINATION. In the course of various diseases noxious matters accumulate in the blood, from various causes, and become sources of great disturbances and danger to the system; some remedies, especially those which stimulate the various secreting and excreting organs, have an eliminating power, and thus act therapeutically. These eliminating or evacuating agents have been long recognised as important, and in using them the indications pointed out by nature, are in many instances followed. In health, these noxious matters are never allowed to accumulate, but are silently eliminated by organs specially constructed for the purpose.

5th, RESTORATION. Some Medicines act therapeutically by restoring to the system something that is wanting.

6th, STIMULATION. According to the Brunonian theory, all medicines are stimulants to a greater or less extent, but while few now will adopt such views, none can doubt that it is often desirable for the purpose of promoting the cure of disease to exalt some or all of the vital functions above the state in which they happen to be at the time stimulating remedies are resorted to, and that on the other hand.

7th, SEDATION or Diminution of action is often loudly called for.

8th, REVULSION, Counter Irritation or Derrivation. This principle of action is of extensive applicability in the cure of disease; nature frequently indicates it. Metastasis often demand it.

9th, ALTERATION. In a large majority of cases, the causes of disease have ceased to act, or if still acting, are not cognizable; or if so are not of a material nature—in such cases medicines are administered to alter diseased action. The employment of the term alterative, can however scarcely be looked upon in any other sense than as a convenient mode of classifying certain unintelligible results, which depend altogether for their acceptance upon observation.

10th, Medicines may act therapeutically by chemical influence. 11th, Medicines may act therapeutically by mechanical influence.

PARTS TO WHICH MEDICINES ARE APPLIED.

1st, *Mucous Membranes*, (a) The Stomach.—Medicines are in the majority of instances, introduced into the stomach ; it is commonly the most convenient, and suitable mode of access to the circulation ; here are numerous absorbing vessels, and the nervous system is also largely developed in this quarter ; it is central, and from it impressions are soon carried to the most remote parts ; taking in the whole intestinal canal the extent of surface is very great, so that impressions of a varied character both local and general, can be readily generated from the introduction of medicines into the stomach. (b) The Rectum. As the large intestines possess less sensibility than the stomach, the dose of medicines administered by the Rectum requires in most cases to be much larger than when given by the mouth. Medicines are administered by the Rectum with two distinct objects, one to evacuate the bowels by irritating the part, and the other to produce their peculiar and characteristic impression, either on the rectum, or the system generally ; in the latter case the bulk must be small, and when possible, it is desirable to introduce it in the solid form, (*suppository*) or if in the liquid form, to take such precautions as will prevent its speedy expulsion. The circumstances under which medicines may be administered by the rectum, are 1st when the stomach is unable to retain them, or from any cause they are thought to be injurious to that organ. 2nd, When it is desirable to produce a very rapid impression on the system, and thus to seek an entrance by every avenue. 3rd, When from the long continuance of the indication for the use of any medicines, it is advisable to vary the surface of application, in order to avoid wearing out the susceptibility of the stomach, and thus to prolong the period during which the effects of the medicine may be sustained. 4th, When the seat of the disease is in parts neighbouring to the rectum, and the disease itself is of such a character as to be relieved by impressions

made in its vicinity more speedily, and effectually, than through the system at large, (ex. in painful affections of the urinary and genital organs.) 5th, When the indication is to produce the effect upon the rectum itself.

(c) *The Lungs.* With the exception of ænesthetics medicines are seldom applied to the mucous membrane of the Lungs unless for local purposes.

(d) Mucous membrane of mouth both for local and general purposes.

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| (e) | " | " | Eye only for local purposes. |
| (f) | " | " | Nose chiefly for local purposes. |
| (g) | " | " | Bladder and Urethra for local pur's. |
| (h) | " | " | Vagina for local purposes. |

2nd, *The Skin.* Many substances used in disease habitually produce their effects by being applied to the skin, such as blisters, rubefacients, baths &c., but besides these, many substances usually introduced into the stomach, or rectum, may be made to produce their ordinary effects, by being applied to the surface of the body, for the skin is abundantly supplied with nerves and small vessels, and in parts especially where the epidermis is thin and soft, absorption in many instances takes place very quickly. The Intralipitic method consists in merely using friction in the application of the medicines, which should be in a minute state of subdivision, and incorporated either with oil, water or alcohol according to the nature of the substance used. The Endermic method consists in first removing the cuticle by a blister or otherwise, and then applying the medicine to the denuded surface, the best part of the body being, when required for general purposes, the epigastrium. In this way medicines sometimes act as promptly as when given by the mouth. This mode of administration is not however, had recourse to from choice, but only when circumstances forbid the administration by the mouth or rectum, for often great irritation and even sloughing has been induced, especially in children.

3rd, *Injection into the Veins.* Medicines produce their specific effects by being injected into the veins. It is a dangerous mode, and one which is never had recourse to, except in desperate cases.

4th, *Injection into Cellular tissue.*

Medicinal form. Liquid preparations. Decoction, infusion, solutions, medicated Waters, mixture, Syrup, Honeys, Vinegars, Tinctures, Wines, Spirits, Ethers, Distilled Oils. *Solid preparations*, Powders, Pills, Confections, Extracts (two kinds solid and fluid), Lozenge, Ointment, Cerate Plaster, Liniment.

ANÆSTHETICS, PHYSIOLOGICAL EFFECTS—USES IN DISEASE.

Chloroform, Sulphuric Ether.

Antacids, Definition, Physiological effects, how produced. Therapeutical effects, neutralizing acidity in intestinal canal, aiding in digesting fatty substances, alkalizing system; rendering urine more solvent. Diseases in which used, cautions as to use. Combinations, Magnesia Calcinata, magnesia carbonas, liquor potassæ, carbonas potassæ, bicarbonas potassæ, carbonas sodo, bicarbonas sodo, liquor calcis, creta preparata, liquor ammoniæ, spiritus ammoniæ, carbonate ammoniæ, carbo ligni.

AUTHELMINTICS, VERMIFUGES, VERMICEDES, DEFINITION.

Different kinds of Worms, where found—causes of Worms.—How Authelmintics produce their effects. Administration and combinations.

Spigelia, Santonine, Turpentine, Mucuna Pruriens, Filix Mas, Koussou, Calomel, purgatives, Iron and Bitter tonics.

Anti-Spasmodics. Definition. Physiological effects. Therapeutical uses, contra indication, Assafœtdia, Valerian, Musk, Castor.

Astringents. (Styptics Desiccants Constringents,) definition of each. Physiological effects and modes of production. Therapeutical uses, 1st, check morbid and excessive discharges. 2nd, obviate morbid relaxation. 3rd, check inflammation. 4th correct putrefaction.

Cold as an astringent. Vegetable astringents, Nut Galls,

Oak bark, Tannic Acid, Gallic Acid, Catechu, Kino, Rhatany, Logwood, Matico, Uva, Ursi.

Mineral Astringents. Alum, Lead, Litharge, Carbonate of Lead, Acetate of Lead, Diacetate of Lead. Sulphate of Copper, Sulphate of Iron, Peruitrate of Iron, Sulphate of Zinc, Acetate of Zinc, Carbonate of Zinc, Oxyde of Zinc, Prepared Chalk, Creasote.

Cathartics; definition. Physiological effect, 1st, on Intestinal canal, extent of surface, affected. On Mucous membrane, on Skin, on Brain, on Vascular system.

Modes in which cathartics produce their effects. 1st, By irritating mucous membrane. 2nd, increasing secretion from canal. 3rd, by producing bile. 4th by absorption, and acting on nerves

Therapeutical effects. Evacuating contents of canal. To promote secretion. To deplete, revulsion, absorption, acting on neighbouring viscera. Abuse of Cathartics. Contra indications, treatment of over purging. Modes of administration, combinations. 1st Laxatives, definition, Laxative articles of food, Manna, Sulphur, Magnesia, Castor Oil.

Purgatives. Rhubarb, Aloes, Senna, Jalap. Drastics. Definition, Podophillin, Scammony, Colocynth, Hellebore, Gamboge, Elaterium, Croton Oil. Salines, Definition, Epsom Salts, Glauber Salts, citrate of Magnesia, Phosphate of Soda, Sulphate of Potash, Bitartrate of Potash, Tartrate of Potash, Tartrate of Soda and Potash.

Mercurial Cathartics. Calomel, Blue Pill.

Cathartic Enamata.

Caustic, Definition, effects, mode of production, uses. Caustic potash, Chloride of Zinc, Dried. Sulphate, Arsenious Acid, Nitrate of Silver, Subacetate of Copper, Sulphate of Copper, Nitric Oxid of Mercury.

Acids, Acetic Sulphuric, Muriatic Nitric, Caustic Ammonia.

Diaphoretics, (Sudorifics Diapnoics), Definition. Skin and its relations with other parts, effects of Diaphoretics local and remote. Modes in which effects produced, 1st, by relaxing skin, 2nd, stimulating circulation. 3rd, by lowering temperature. 4th, by entering circulation and acting directly on skin. 5th, by filling bloodvessels. Therapeutical effects. 1st Depletion, 2nd,

equalizing circulation. 3rd, changing condition of skin. 4th, absorption. 5th, Revulsion. 6th, Elimination.

Administration of Diaphoretics. Contra indications.

Individual Diaphoretics. 1st, cooling applications to skin.— 2nd, warm, do, 3rd, friction. Nauseating diaphoretics, Tartar Emetic, Ipecacuan, refrigerating, Diaphoretics. Solution of Acetate of Ammonia, Nitrate of Potash, Citrate of Potash, Sweet Spirits of Nitre.

Stimulating Diaphoretics, Dovers powders, Guaiacum, Mezereon Sarsaparilla, Sassafras.

Diuretics. Def. Physiological effects, local and remote.— Circumstances modifying effects, 1st, condition of skin. 2nd, Bowels. 3rd, Kidneys themselves. 4th, Form in which given and quantity of fluid drank.

Indications for use. 1st, deplete. 2nd, To eliminate. 3rd, To promote absorption. 4th, To render urine more solvent. 5th, To render urine less irritating. 6th, To stimulate passages. Agencies non-medicinal used as diuretics.

Squill, Digitalis, Juniper Bucu, Pareira, Cauthoides, Turpentine, Capivi, Cubebs Sweet Spirit of Nitre, Nitrate of Potash, Acetate of Potash, Bitartrate of Potash.

Emetics. Def. Organs immediately concerned in vomiting. Physiological effects of emetics, local and remote; circumstances modifying these effects. Indications for use of Emetics.— 1st, Unloading stomach. 2nd, Mechanical compression. 3rd, Reduction of Arterial excitement. 4th, Muscular relaxation.— 5th, Revulsion. 6th, Promotion of secretion. 7th, Depletion. 8th, Absorption. 9th, shock to system. 10th, Local irritation. 11th, Cathartic effects.

CONTRA INDICATIONS, MODIFYING CIRCUMSTANCES.

Rules for giving. Auxiliary emetic Measures, Ipecacuan, Squills, Lobelia, Mustard. Tartar emetic, Sulphate of Zinc, Sulphate of Copper, Carbonate of Ammonia, Sulphate of Mercury.

Emmenagogues. Def. Divisions of Emmenagogues. Rules for administration of Preparations, Iron, Aloes, Guaiacum, Saffron, Ergot, Rue, Savin.

Emollients. (Deluncents,) Relaxatants, def. of each. Physi-

ological effects and modes in which produced uses in diseases. Gum Acacia, Tragacanth, Liquorice, Sugar, Spermaceti Wax, Lard, Olive Oil, Flax Seed, Barley, Oat Meal, Flour, Sago, Arrow-Root, Tapioca.

Epispastics, Vesicants, Rabefacients, counter irritants. Def.

Physiological effects, local and remote. Modes in which they prove curative. 1st, as evacuants. 2nd, as derivatives. 3rd, by substitution. 4th, as general stimulants. 5th, as local stimulants. 6th, as Antisposmodics.

Mustard, Capsicum, Turpentine, Ammonia, Boiling water, Cantharides, Croton Oil, Ipecacuan, Tartar Emetic, Savin, Setons and issues.

Expectorats, Def. modes in which they act, many relative agents. 1st, by local or general. 2nd by local or general stimulation. 3rd, by altering secretion. 4th, by relieving spasms. 5th, by relieving pain. Therapeutical uses, cautions as to use. Tartar Emetic, Ipecacuan, Lobelia, Squill, Senega, Balsam of Tolu, Peru, Benzoin, Benzoic Acid.

Narcotics, Def. Physiological effects. Modifying circumstances, Idiosyncrasy, habit, age, &c. Uses. 1st, allay pain 2nd, irritability. 3rd, Spasm. 4th, Restrains secretion produce sleep. Stimulate. Cautions as to use.

Poppy-heads, Opium, Morphine, Hyoseyamus, Belladonna, Stramonium, Conium, Lupuline, Indian Hemp.

Refrigerants. Def. effects, mode of production ; uses in diseases.

Lemon Juice, Citric acid, Tartaric acid, Oxalic acid, Vinegar, Nitrate of Potash, Chlorate of Potash.

Sedatives. Contra stimulants, Calmatives, def. Effects, uses in disease.

Tartar Emetic, Digetatis, Creasote, Prussic acid, cyanide of Potash, Aconite, Conium, Tobacco. Abstinence. Cold, Blood-letting.

General Stimulants, def. Effects, uses in disease. Aromatics Anise, Calamus, Cardamoms, Carui, Cassia, Cinnamon, Coriander, Fennel, Peppermint, Nutmeg, Mace, Allspice, Long, Pepper, Black Pepper, Ginger. Diffusible and arterial stimulants. Ammonia and preparations Capsicum, Turpentine, Phosphorus, Alcohol, Ether, Camphor.

Special Stimulants or alteratives, Def. Supposed modes of action. Directions for administration. Mercury and preparations. Iodide of Potassium, Bromide of Potassium, Arsenic, Nux Vomica, Cod Liver Oil.

Tonics. Def. how they differ from stimulants and astringents, Effects, local and remote. Modifying circumstances. 1st, age. 2nd, temperament. 3rd, climate. 4th, condition of system. 5th, combination. States favourable and unfavourable to use of tonics. Food and diet.

1st, Pure bitter tonics. Effects and uses, Quassia, Columba, Gentian; Anteperiodics, Cinchona, Quinine, Beberine, Salicine, Acting on Liver, Chiretta, Taraxicum. Aromatic, Chamomile. Canella, Cascarilla, Angustura Myrrh.

Mineral Tonics. Effects, uses, contra indications, combinations. Iron and preparations Manganese, Bismuth. The Mineral Acids, Nitrate of Silver, Oxide of Silver, Arsenic, Sulphate of Copper, Ammoniated Sulphate of Zinc, Oxide of Zinc.

